

# Ultra-Low Phase Jitter LVPECL SMD Clock Oscillator

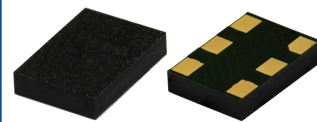
ASVMX-312.500MHz-3BBA



ESD Sensitive



RoHS/RoHS II compliant



7.0 x 5.0 x 1.4mm

Moisture Sensitivity Level – MSL 3

## FEATURES:

- 312.5MHz LVPECL
- Typical phase noise: 80fs (Integration range: 1.875MHz-20MHz)
- $\pm 50$ ppm total frequency stability over  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$  temperature range
- Industry standard 6-Pin 7 x 5mm LGA package

## APPLICATIONS:

- 10/40/400 Gigabit Ethernet
- Fibre Channel 10G/12G SERDES

## KEY ELECTRICAL SPECIFICATIONS

Item	Minimum	Maximum	Unit	Condition
Supply Voltage	-0.3	+3.6	V	
Storage Temp.	-55	+125	$^{\circ}\text{C}$	
Lead Temp.(soldering, 10s)		+260	$^{\circ}\text{C}$	
ESD (HBM)		2	kV	

VDD = 2.375 - 3.63V, TA =  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ , outputs terminated with 50 Ohms to VDD - 2.<sup>(1)</sup>

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	312.500			MHz	
Operating Temperature (TA)	-40		+85	$^{\circ}\text{C}$	
Overall Frequency Stability <sup>(2)</sup>	-50		+50	ppm	
Supply Voltage (VDD)	+2.375		+3.63	V	
Supply Current (IDD)			120	mA	
Output Logic Level	V <sub>OH</sub>	V <sub>DD</sub> -1.35	V <sub>DD</sub> -1.01	V <sub>DD</sub> -0.8	V
	V <sub>OL</sub>	V <sub>DD</sub> -2.0	V <sub>DD</sub> -1.78	V <sub>DD</sub> -1.6	V
Peak to Peak Output Swing (V <sub>swing</sub> )	0.65	0.77	0.95	V	Single ended
Start-up Time			20	ms	
Rise Time (Tr)	85		350	ps	RL=50 $\Omega$ , CL=0pF 20% to 80%
Fall Time (Tf)	85		350		
Duty Cycle	45		55	%	
Phase Noise	Integration Range: 12kHz to 20MHz		175	fsRMS	
	Integration Range: 1.875MHz to 20MHz		80		

### Notes:

1. Guaranteed after thermal equilibrium
2. Inclusive of initial accuracy, temperature drift, aging, shock, vibration from  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .

## PART IDENTIFICATION

ASVMX-312.500MHz -3BBA - 

### Packing

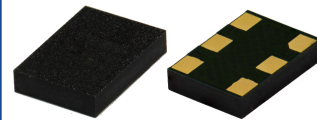
Blank: Bulk or Tube  
T: Tape & Reel (1k/reel)

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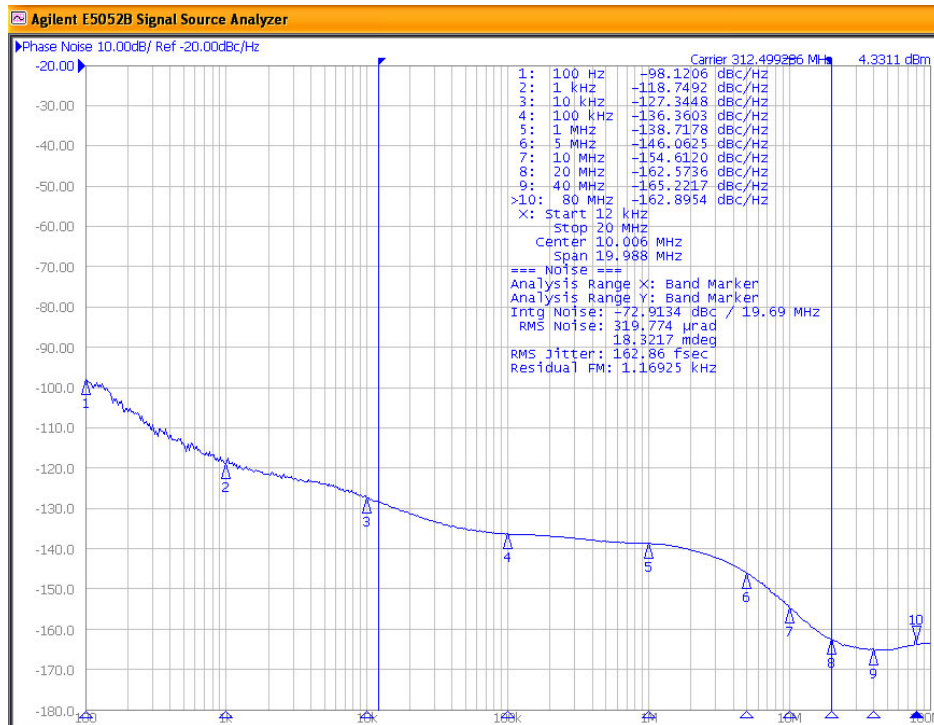
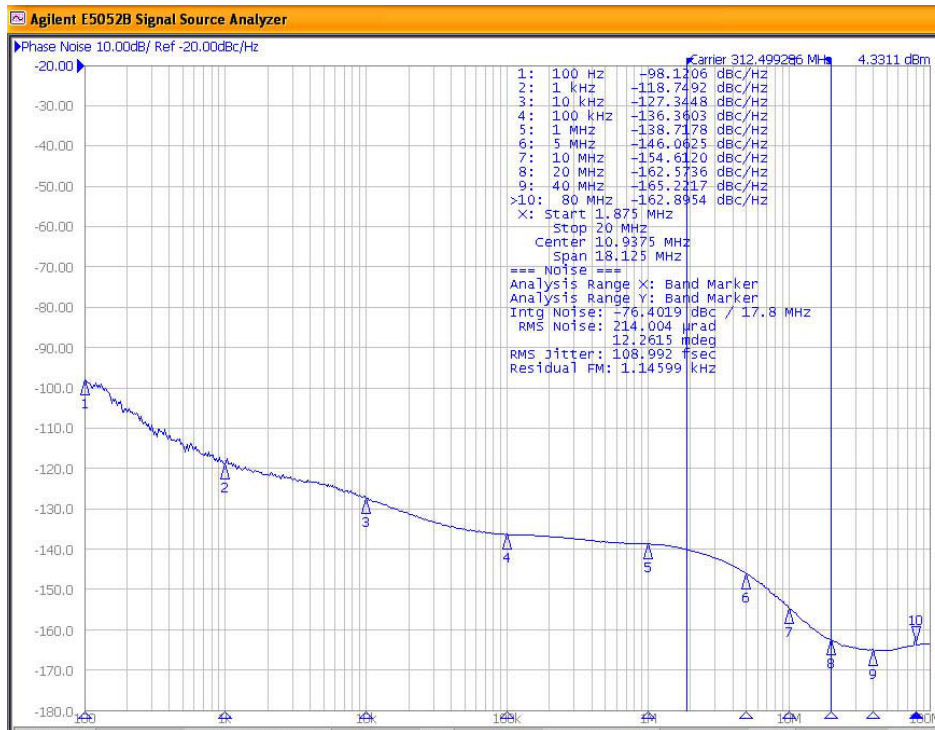


RoHS/RoHS II compliant



7.0 x 5.0 x 1.4mm

## TYPICAL PHASE NOISE

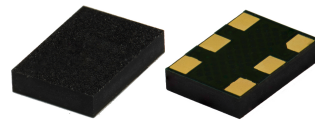


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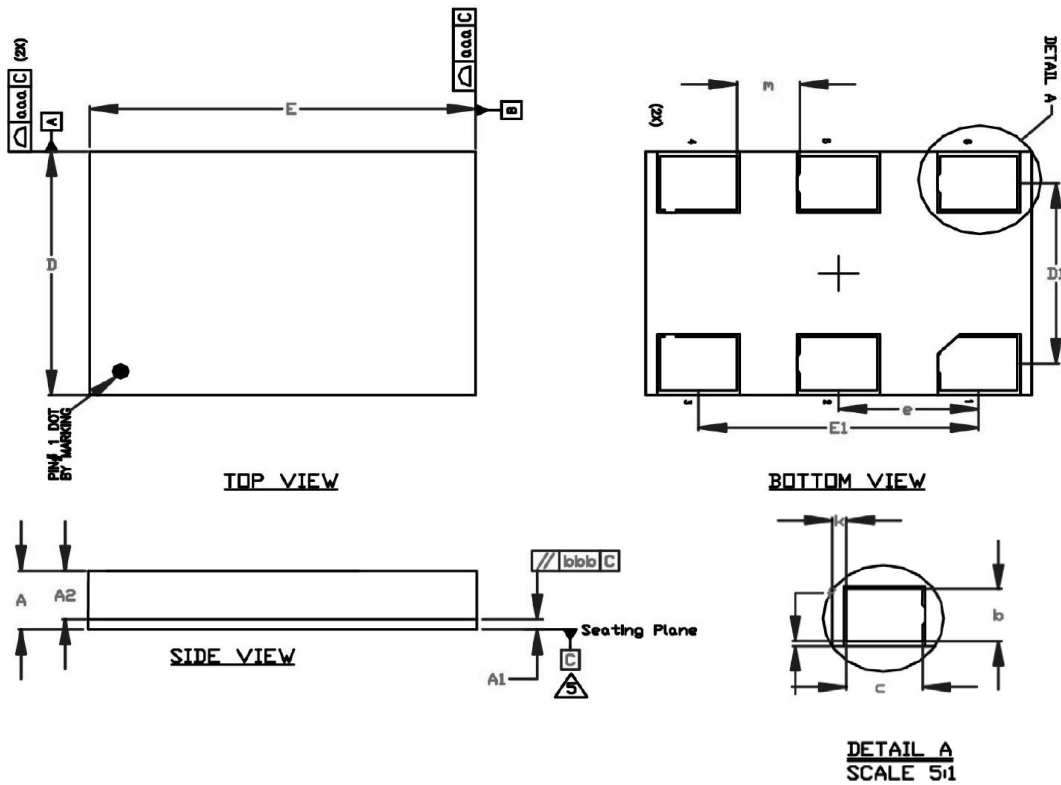


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7.0 x 5.0 x 1.4mm

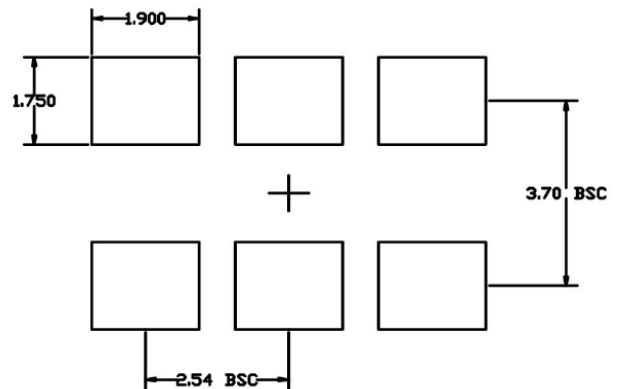
## OUTLINE DIMENSION



Ref.	Min.	Nom.	Max.
A	1.260	1.330	1.400
A1	0.190	0.230	0.270
A2	1.070	1.100	1.130
D	4.900	5.000	5.100
D1	3.700 BSC		
E	6.900	7.000	7.100
E1	5.080 BSC		
b	1.050	1.100	1.150
c	1.350	1.400	1.450
e	2.540 BSC		
f	0.050	0.100	0.150
k	0.210	0.260	0.310
m	1.090	1.140	1.190
n	36		

Dimensional Tolerance	
aaa	0.100
bbb	0.070

## Recommended Land Pattern



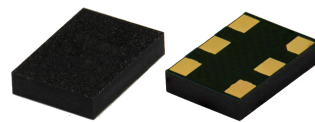
Dimensions: mm

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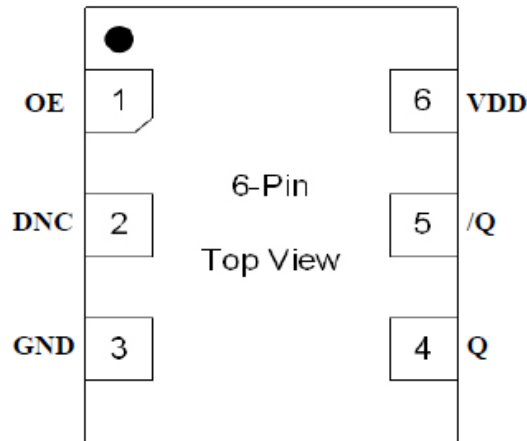


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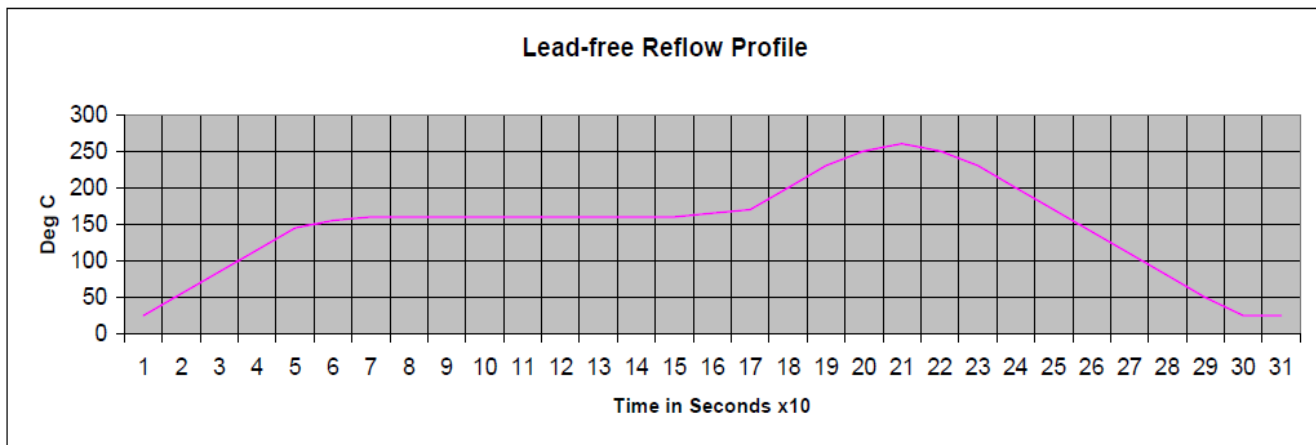
7.0 x 5.0 x 1.4mm

## PIN CONFIGURATION



Pin #	Pin Name	Pin Type	Pin Level	Pin Function
1	OE	I, SE	LVC MOS	Output Enable, disables output to tri-state. 0 = Disabled, 1= Enabled, 50k $\Omega$ Pull-up
2	DNC			Make no connection, leave floating
3	GND	PWR		Power Supply Ground
4	Q	O	LVPECL	Clock Output
5	/Q	O	LVPECL	Complimentary Clock Output
6	VDD	PWR		Power Supply

## REFLOW PROFILE



Parameters	Specifications
Average Ramp-up Rate	3°C /second max.
Pre-Heat Temp 150 – 200°C	60 – 180 second
Temp > 217°C	60 – 150 second
Time @ Peak Temperature	20 – 40 second
Peak Temperature	260°C + 0°C / -5°C
Ramp-down Rate	-6°C / second max.
Time 25°C to Peak Temp.	8 minutes max.

